

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (Currently Amended): A method for nozzle-jetting oxygen into a synthesis reactor for oxy-dehydration for largely axial flow of the gas mixture through a catalyst bed, wherein the oxygen is fed to a ring distributor system having a plurality of concentric ring pipes provided with respective exit openings and arranged above the catalyst bed, the oxygen being fed in pure form, as air mixed with inert gas, or in water vapor, and is jetted in the form of oxygen jets on to the catalyst surface through the exit openings in the ring distributor at an inclined angle from the vertical; wherein the oxygen is jetted in a plane about 50-300 mm above the catalyst bed to ensure an oxygen dwelling time of ≤ 1 second in a space above the catalyst bed, and wherein the oxygen jets do not overlap each other prior to reaching the catalyst bed.

Claim 2 (Previously Presented): The method according to claim 1, wherein the jetting of the oxygen is taken up in a direction on to the reactor center and/or in direction on to the reactor wall and/or in a tangential alignment.

Claim 3 (Previously Presented): The method according to claim 1, wherein the jetting of the oxygen takes place in tangential alignment and for each concentric ring pipe of the ring distributor in alternating alignment from concentric ring pipe to concentric ring pipe of the ring distributor.

Claims 4-5 (Canceled).

Claim 6 (Previously Presented): The synthesis reactor according to claim 11, further comprising:

(c) a central gas inlet pipe centrically penetrating the catalyst bed; and

(d) a mixing dome above the catalyst bed;

wherein the ring distributor surrounds the centric gas inlet pipe.

Claim 7 (Previously Presented): The synthesis reactor according to claim 11, wherein the exit openings ensure a gas flow in a direction on to a reactor center and/or reactor wall and/or in a tangential direction.

Claim 8 (Previously Presented): The synthesis reactor according to claim 11, wherein adjacent exit openings of the exit

openings have different flow outlet directions.

Claim 9 (Previously Presented): The synthesis reactor according to claim 11, wherein the exit openings are aligned in alternating sequence to adjacent exit openings of the exit openings of an adjacent ring pipe of the plurality of concentric ring pipes.

Claim 10 (Previously Presented): The synthesis reactor according to claim 11, wherein the exit openings are designed as holes or nozzles.

Claim 11 (Currently Amended): A synthesis reactor for oxy-dehydration comprising:

- (a) a catalyst bed; and
- (b) a device, for nozzle-jetting oxygen onto the catalyst bed, comprising a ring distributor having a plurality of concentric ring pipes provided with respective exit openings above the catalyst bed;

wherein largely axial flow of gas mixture through the catalyst bed occurs;

wherein the exit openings are designed to jet the oxygen in the form of oxygen jets onto a catalyst surface of the catalyst bed at an angle inclined away from the vertical such that the

oxygen jets do not overlap each other prior to reaching the catalyst bed; and

wherein the ring distributor is positioned in a plane about 50-300 mm above the catalyst bed to ensure an oxygen dwelling time of ≤ 1 second in a space above the catalyst bed.